Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
2013 Coastal Washington NAIP 4-Band 8 Bit Imagery

1.2. Summary description of the data:
This data set contains imagery from the National Agriculture Imagery Program (NAIP). The NAIP program is administered by USDA FSA and has been established to support two main FSA strategic goals centered on agricultural production. These are, increase stewardship of America's natural resources while enhancing the environment, and to ensure commodities are procured and distributed effectively and efficiently to increase food security. The NAIP program supports these goals by acquiring and providing ortho imagery that has been collected during the agricultural growing season in the U.S. The NAIP ortho imagery is tailored to meet FSA requirements and is a fundamental tool used to support FSA farm and conservation programs. Ortho imagery provides an effective, intuitive means of communication about farm program administration between FSA and stakeholders.
New technology and innovation is identified by fostering and maintaining a relationship with vendors and government partners, and by keeping pace with the broader geospatial community. As a result of these efforts the NAIP program

provides three main products: DOQQ tiles,
Compressed County Mosaics (CCM), and Seamline shape files
The Contract specifications for NAIP imagery have changed
over time reflecting agency requirements and improving
technologies. These changes include image resolution,
horizontal accuracy, coverage area, and number of bands.
In general, flying seasons are established by FSA and are
targeted for peak crop growing conditions. The NAIP
acquisition cycle is based on a minimum 3 year refresh of base
ortho imagery. The tiling format of the NAIP imagery is based
on a 3.75' x 3.75' quarter quadrangle with a 300 pixel buffer
on all four sides. NAIP quarter quads are formatted to the UTM
coordinate system using the North American Datum of 1983.
NAIP imagery may contain as much as 10% cloud cover per tile.
Original contact information:

Contact Org: Aerial Photography Field Office (APFO)

Phone: 801-844-2922

Email: apfo.sales@slc.usda.gov

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2013-06-30

1.5. Actual or planned geographic coverage of the data:
W: -124.864, E: -116.43, N: 49.157, S: 45.445

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Image (digital)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:
coastal.info@noaa.gov

2.5. Phone number:
(843) 740-1202

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible
(describe or provide URL of description):

Process Steps:

- 2013-08-23 00:00:00 - DOQQ Production Process Description USDA FSA APFO NAIP Program 2013 State: Washington Digital imagery was collected at a nominal GSD of 1.0m using seven Cessna 441 aircrafts flying at an average flight height of 9052m AGL. All aircraft flew with Leica Geosystem's ADS80/SH82 digital sensors with firmware 3.20 or newer. Each sensor collected 11 image bands. PanF27A,PanF02A and PanB14A panchromatic bands with a spectral range of 465-676nm. RedN00a and RedB16a with a spectral range of 604-664nm. GrnN00a and GrnB16a with a spectral range of 533-587nm. BluN00a and BluB16a with a spectral range of 420-492nm and Near-infrared bands NirN00a and NirB16a with a spectral range of 833-920nm. The CCD arrays have a pixel size of 6.5 microns in a 12000x1 format. Both the CCD's and the A/D convertors have a dynamic range of 12bits. The data is stored in 16bit format. The ADS is a push-broom sensor and the ground footprint of the imagery at NAIP scale is 12km wide by the length flightline. The maximum flightline length is limited to approximately 240km. The factory calibrations and IMU alignments for each sensor (Serial Numbers: 1321, 1413, 1420, 30012, 30017, 30022, 30034, and 30110) were tested and verified by in-situ test flights before the start of the project. The Leica ADS Flight Planning and Evaluation Software (FPES) is used to develop the flight acquisition plans. Flight acquisition sub blocks are designed first to define the GNSS base station logistics, and to break the project up into manageable acquisition units. The flight acquisition sub blocks are designed based on the specified acquisition season, native UTM zone of the DOQQs, flight line length limitations (to ensure sufficient performance of the IMU solution) as well as air traffic restrictions in the area. Once the sub blocks have been delineated they are brought into FPES for flight line design. The design parameters used in FPES will be 30% lateral overlap and 1.0m resolution. The flight lines have been designed with a north/south orientation. The design takes into account the latitude of the state, which affects line spacing due to convergence as well as the terrain. SRTM elevation data is used in the FPES design to ensure the 1m GSD is achieved over all types of terrain.
- 2013-08-23 00:00:00 - The raw data was downloaded from the sensors after each flight using Leica XPro software. The imagery was then georeferenced using the 200Hz GPS/INS data creating an exterior orientation for each scan line (x/y/z/o/p/k). Technicians precisely measured tie points in 3 bands/looks (Back/Nadir/Forward) for each line using Leica Xpro software. The resulting point data and exterior orientation data were used to perform a full bundle adjustment with ORIMA software. Blunders were removed, and additional tie points

measured in weak areas to ensure a robust solution. Once the point data was clean and point coverage was acceptable, photo-identifiable GPS-surveyed ground control points were introduced into the block adjustment. The bundle adjustment process produces revised exterior orientation data for the sensor with GPS/INS, datum, and sensor calibration errors modeled and removed. Using the revised exterior orientation from the bundle adjustment, orthorectified image strips were created with Xpro software and the April 2013 USGS 10m NED DEM. The Xpro orthorectification software applies an atmospheric-BRDF radiometric correction to the imagery. This correction compensates for atmospheric absorption, solar illumination angle and bi-directional reflectance. The orthorectified strips were then overlaid with each other and the ground control to check accuracy. Once the accuracy of the orthorectified image strips were validated the strips were then imported into Inpho's OrthoVista 4.6 package which was used for the final radiometric balance, mosaic, and DOQQ sheet creation. The final DOQQ sheets, with a 300m buffer and a ground pixel resolution of 1m.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected

- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

https://www.fisheries.noaa.gov/inport/item/51495

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://coast.noaa.gov/dataregistry/

7.3. Data access methods or services offered:

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.